

Montgomery (E. E.)

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AS AN

ANESTHETIC IN LABOR.

BY

E. E. MONTGOMERY, M.D.,

Philadelphia, Pa.,

Late Obstetrician to the Philadelphia Hospital.



*Reprinted from THE AMERICAN JOURNAL OF OBSTETRICS AND DISEASES
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COMPLIMENTS OF THE AUTHOR.

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THE expression of Galen, "*Dolor dolentibus inutilis est,*" has ever been an actuating principle in the practice of medicine and surgery, and would undoubtedly have been equally effective in midwifery, had not obstetricians labored for ages under that incubus to progress, "*Meddlesome midwifery is bad.*"

It is true there is now no question as to the value of anesthetics in irregularities of labor pains, in eclampsia, and in the various operative obstetric procedures; but their habitual employment for assuaging the pains of natural labor is still a much mooted subject. We are not confronted, as were the earlier advocates of anesthesia, with the charge that the arrest of labor-pain is a violation of divine and physiological laws, retribution for which entails upon the unfortunate patient paralysis, mania, and other bodily ills; but it is apparent that anesthesia in natural labor is not only not practised, but opposed by the teaching and practice of the majority of the profession of this country. In the discussion of a paper read before the Philadelphia Obstetrical Society in 1879, the general sentiment was expressed as adverse to the practice.

It may be asserted that this opposition to anesthesia in nat-

ural labor is sufficient evidence that such practice is undesirable, but we only need to quote the following graphic descriptions of the last stage of labor to controvert this:

Dr. Merriman ("Synopsis of Parturition," p. 15) says: "The pulse gradually increases in quickness and force; the skin grows hot; the face becomes intensely red; drops of sweat stand upon the forehead, and a perspiration, sometimes profuse, breaks out all over the body; frequently violent trembling accompanies the last, and at the moment the head passes into the world, the extremity of suffering seems beyond endurance." Denman ("System of Midwifery," p. 103): "The distress and pain which women often endure while they are struggling through a difficult labor are beyond all description, and seem to be more than human nature would be able to bear under other circumstances." "Mere pain can destroy life" (Gooch, in Merriman's "Synop. of Parturition," p. 239), as is shown by the report of women delivered in the Dublin Lying-in Hospital under Dr. Collins: "Of women whose sufferings were terminated in 2 hours only, 1 in 320 died; where labor varied in duration from 2 to 6 hours, 1 in 145 died; in those in whom it continued from 7 to 12 hours, 1 in 80 died; where it endured from 12 to 24 hours, 1 in 26 died; where it lasted from 24 to 36 hours, 1 in 17 died: and out of all those whose parturient sufferings were prolonged beyond 36 hours, 1 in every 6 perished." ("Anesthesia in Surg. and Midwifery," Simpson, p. 98.)

Meigs ("Prac. of Midwif.," p. 153) says: "What do you call the pain of parturition?" There is no name for it but agony."

Finding so universal assent as to the severity of labor pains, we are induced to seek farther, for the cause of the non-administration of anesthetics. It is undoubtedly based upon a want of confidence in the safety of the various alleviating agents. Of these, chloroform has probably been the most frequently used, in this country.

Anesthesia in obstetrics was first introduced and actively championed by Simpson. The frequent fatality from the use of chloroform in surgical practice, and the influence of public opinion, have led to its more infrequent use in obstetrics.

Theoretical reasons have been given, why chloroform should be perfectly safe in labor; but are all dispelled, when cases are reported, as they have been by Fagge (*Schmidt's Jahr.*, No. 5, 1860) and Curtin (Discuss. Philad. Obs. Soc., Dec. 4th, 1879), in which death occurred as a result of its administration.

As to the influence of chloroform upon the uterine contractions and the progress of labor, there has been great diversity of opinion. It has, however, been certainly demonstrated that profound chloroform narcosis does suspend involuntary as well as voluntary muscular contractions. But complete narcosis is unnecessary except in operative procedures. In natural labor, it is only given during a pain, allowing the patient to recover consciousness in the interval; but, even so administered, there is a general feeling that the frequency of uterine inertia, post-partum hemorrhage, is thereby greatly enhanced. But this tendency to weakening and after-hemorrhage is not so significant as to outweigh the advantage of relief from pain, were we not under the ban of the relatively so rare evil influences and fatal results of the drug in surgical cases.

Although ether has been generally preferred to chloroform in surgical practice, from its greater safety, it is less desirable in obstetrics, for the reason that the patient must be profoundly etherized to afford relief. A small quantity of ether removes the woman's moral control without alleviating pain. Tait (*Brit. M. J.*, vol. ii., 1880, p. 845) directed attention to the fact that ether passes quickly into the fetal circulation and increases the peril of the fetus. He cites a case of extrauterine pregnancy operated upon under ether, in which the fetus was profoundly hypnotized, and says this peril to the child from ether was indicated by Simpson.

Klikowitsch (*St. Petersb. M. Wochenschr.*, 1880, 117 and 249) praises a mixture of nitrous oxide four parts, air one part, as being the ideal obstetric anesthetic agent. But the difficulty in transporting so large a bulk, and the necessity for a special apparatus, render its general use in private practice improbable.

The ideal obstetric anesthetic is one which will act rapidly, surely, and safely, one whose effects are of short duration, and

that can be carried in small compass. The bromide of ethyl answers these demands. It is a colorless, not unpleasant smelling fluid, which when breathed removes the sensation of pain without destroying intelligence. It was quite recently introduced into surgical practice in this country by Dr. Levis, though its anesthetic properties had long been known.

Rabuteau, studying to fix its physiological action, arrived at the following conclusion: the bromide of ethyl, in comparison with chloroform, is better borne, is more rapid, but displaced, its action is less continuous, and is eliminated through the lungs much more rapidly.

Lebert (*Arch. de Tocologie*, June, 1882) first employed it in obstetrics. He published four cases, a forceps operation, a version, and two normal labors, in which he produced complete absence of pain with but little disturbance of the sensorium. He mentioned that he had tried the agent for a long time and spoke with such enthusiasm that others were induced to follow his example.

C. Wiedemann (*St. Petersb. M. Wochenschr.*, 1883, No. ii.) reports a series of seven well-controlled normal labors, and Haeckermann (*Centralbl. f. Gynaek.*, 1883, No. 34) has tried the drug in fifty cases. Both concluded that it could be used, without danger to mother or child, without influence upon the course of labor, and without loss of consciousness, essentially diminishing or quite removing the pains of labor. They pronounced it the long sought-for, and yearned-after means for abrogation of the curse resting upon mankind, "with pain shalt thou bring forth thy children."

Prof. Müller (*Arch. f. Gynaek.*, Berl., 1883, xxii., 99, 102. *Berl. Klin. Wochenschr.*, 83, xx., 673) employed it in twenty-two exactly observed obstetrical cases; sixteen were primiparæ and six multiparæ, all of whom were quite healthy. In nine cases, a trifling acceleration of the heart and lung activity was observed. In eight cases, dilatation of the pupil swiftly occurred and very frequently the face became red—a circumstance which speaks for, rather than against the agent, as we ascribe the syncope of chloroform to anemia of the brain. The unpleasant after-influences of chloroform, as pain in the head, etc., were entirely wanting. Elimination appeared to occur

almost exclusively by the lungs, and continued over the first two days of childbed, producing a garlicky odor upon the breath. This odor could be distinctly perceived upon the breath of the fetus, showing that it had quickly passed to its circulation, but without producing the most trifling effect upon it.

Müller did not, like his predecessors, find the drug free from disadvantage. In five of his cases, weakness of labor was induced, but all were terminated naturally. No hemorrhage followed, nor was there any delay in the process of involution. More important still was disturbance of the respiratory organs during convalescence. One patient, to whom eighty grams (fl ȝ ij.) were given, complained afterward of suffocation and headache, and was annoyed by a dry cough. Temperature and pulse were normal, with regular action of the abdominal organs. Coarse crepitant râles were heard over both lungs. The unpleasant symptoms had vanished by the tenth day. The second patient, to whom over 100 grams (fl ȝ iiss.) were given, presented more serious symptoms. About the third or fourth day of convalescence, the pulse rose to 100, Temp. 39° C. (102½° F.), and both lungs were filled with large and small crepitant râles, without phenomena of smothering. The symptoms vanished with profuse expectoration, and the patient was discharged at the end of two weeks well. His experience further showed it not always effective. Thus in thirteen cases in which it was administered at the time of expulsion, a complete result was obtained in but five cases, three times pain was diminished, but in five cases it produced no effect whatever.

I have used the drug in twenty-nine cases, and have become so well pleased with its action as to regard it a necessity in the practice of obstetrics.

In the use of a new anesthetic, and one which, from its recent use, must necessarily be regarded with suspicion, I have been extremely careful in observing and noting its effects.

Of these cases, eight were primiparæ and twenty-one multiparæ; in the former, delivery was completed five times with forceps, in the latter eleven times.

Analyzing these cases farther, discloses that :

In 5, ethyl was not given until the forceps were applied ;

“ 3, labor was completed naturally where previous labors were instrumental ;

In 1, former labor was also instrumental;

“ 3, labor pains were weak before and after administration of the drug;

“ 2, pains were weak, but strength greatly increased after its administration;

“ 2, the fetus presented with vertex in R. O. P. position;

“ 1, delivery followed by uterine inertia, inversion, and hemorrhage;

“ 1, fetus still-born;

“ 1, child died same day in convulsions;

“ 1, child died second day of cyanosis.

In the presentation of any anesthetic for general obstetric use, the profession have the right to demand that it shall be shown to be absolutely safe for mother and child; that it will not cause uterine inertia, thus increasing the danger of post-partum hemorrhage; nor induce acute inflammatory conditions in the organs by which it is eliminated, complicating the puerperal stage.

Of my cases, three deserve especial consideration; in one, a woman of delicate physique, who had been supposed to have phthisis in a previous pregnancy, after inhalation of about a drachm of the ethyl during three pains, began to complain of a sense of suffocation or oppression; respirations were less frequent and sighing; pulse normal, pupils dilated. The anesthetic was discontinued and labor completed normally, but the sensation did not wholly disappear until the following day. The second, a nervous and hysterical primipara with fetus presenting the R. O. P., took $\frac{3}{4}$ vi. between 9.30 P.M. and 2 A.M., when the delivery was completed by the forceps. The uterus contracted firmly. There was no laceration of vaginal mucous membrane or perineum. The patient seemed in good condition, and did well until in the afternoon. At 5.30 P.M., T. 103°, P. 152, respirations frequent, looked badly, abdomen tympanitic, bowels had been frequently evacuated unconsciously. Quinine, morphine, and digitalis were promptly given, and vaginal injections employed.

The following morning her temperature was normal, pulse 120. Her subsequent improvement was undisturbed, save by the want of control of the bowel, which continued for nearly ten days.

The third patient, a primipara, having had more or less severe pain for twenty-four hours without the os dilating, was at 12 M. ordered, R Ext. belladon, Morphine sulph., aa gr. ij.; Ol. theobromae, q. s. ft. supposit. no. iv. One suppository to be inserted at once and another in the evening. At 10 P.M., I found they had inserted three. She was then experiencing the effects of the belladonna, in dryness of the throat, dilated pupils, etc. Pains were infrequent and feeble, os dilated slowly. At 8 A.M. it was fully dilated, the fetal head was driven down to the inf. strait, but the pains were insufficient to accomplish more. At 9.15 A.M., delivery was completed with forceps. The ethyl was not administered until the application of the forceps, and was continued until delivery. After delivery of the fetus, the uterus was flabby, did not contract, and bleeding was quite free. The removal of the placenta was hastened by expression and traction upon the placental mass by two fingers in the vagina. Shortly after its delivery, continued hemorrhage, and the absence of a uterine tumor through the abdominal walls, led to a vaginal examination which disclosed complete inversion of the uterus. She was quickly given the ethyl, and the uterus restored by pressing the fingers against the fundus and carrying the hand into the vagina, while the uterus was held by the external hand.

The placenta had been attached to the posterior surface, low down. The uterine cavity was washed out with hot water. She recovered without special difficulty.

The first case mentioned was one unsuitable for the administration of any anesthetic. The alarming symptoms of the second case I am inclined to attribute rather to the shock of a threatened peritonitis than to any deleterious effects of the anesthetic. In the third case, the inertia was too plainly present before its use. Although the ethyl was administered to restore the organ, it became at once quite firm, and there was no subsequent inclination to relaxation.

There was a fetal mortality of three. The first died of cyanosis the second day after delivery. It was small and poorly developed. The mother had been under treatment during the last three months of pregnancy, for albuminuria, the labor had been quite tedious and was completed by forceps, with some difficulty. The other two were both cases in

which the anesthetic was only given during the use of instruments; in one it was the eleventh pregnancy. She had a pendulous abdomen, and the fetus presented the vertex in R. O. P. position. The delivery was accomplished after considerable difficulty. The child did well for several hours when convulsions occurred and death followed. The other was a primipara seen in consultation. She had a contracted conjugate, and had been in labor some hours. Her attendant had made three trials with instruments before my arrival. The head was delivered after hard pulling, the cord encircled the child's neck, but no pulsations were perceptible in it. The greatest difficulty was experienced in delivering the body. Prolonged efforts were made to resuscitate the child without avail.

In this paper, then, we are able to enumerate one hundred and twelve cases in which the drug was used without any fatality for mothers, and with but three deaths in children, none of which could be attributed to its action. Fearing that the unusually large proportion of operative cases in my series would be attributed to the enervating effect of the drug upon the progress of labor, I have looked over the notes of the same number of cases immediately preceding those in which the anesthetic was used, and find that twelve of them were operative.

With but one exception, the anesthetic was not employed until the completion of the second stage of labor, and in five, only for the application of instruments. The only case of post-partum inertia was one of these, the third case described above.

The ethyl was administered with the advent of each pain, by holding over the face of the patient a napkin on which a few drops had been poured. This was removed as the pain subsided. There was no choking or suffocation, as in chloroform, and entire absence of the stage of excitement. After one inhalation, the patient invariably begged for it with the advent of each recurring pain. With small quantities, the sensation of pain was blunted, while intelligence was uninterrupted; the patient was perfectly subject to control and ready to render or withhold voluntary efforts as desired. Under such treatment, the expulsive efforts resembled those made to evacuate obsti-

nately constipated bowels and were not attended with more pain. In multiparæ, the usual expression was that they had never known such relief.

No diminished power in the uterine contractions was observed subsequent to its use; in fact, in many of the cases where before the contractions had been ineffective and irregular, they became strong and regular. In one case I attempted to determine the duration of pause and pain during a part of the labor, by palpation over the abdomen, with the following result:

Before Administration.		After Administration.	
Time of beginning.	Length.	Time of beginning.	Length.
11', 13", 30''' P.M.	30'''	11', 40", 45'''	30'''
11', 15", 45'''	30'''	11', 42", 30'''	1"
11', 19"	1", 30'''	11', 44", 30'''	45'''
11', 21", 20'''	1"	11', 46", 30'''	1"
11', 22", 45'''	30'''	11', 49", 15'''	1"
11', 25", 20'''	1"	11', 52"	30'''
11', 27"	30'''	11', 54"	1"
11', 28", 45'''	2", 30'''	11', 56"	1.15
Total T. 17", 45''' Total L. 8"		T. T. 16", 30''' T. L. 7"	

It was difficult to determine the exact length of the first and third pains after administration of the drug, as a nausea that had existed for some time then culminated in vomiting. The above kind of observation has not, however, sufficient power of demonstration to decide the important question whether this agent influences the character of the labor pains, and consequently the duration of the labor.

I have noticed a marked want of uniformity in the action of different preparations of this drug. Some, procured for use in the Philadelphia Hospital, had an unpleasant irritating odor and was slow in producing the anesthetic effect. To this fact I am inclined to ascribe the want of action experienced by Muller in a number of his cases. I have been in the habit of specifying either Wolff & Co. or Parke, Davis & Co. when procuring it, as I have invariably found their preparations of the drug with a pleasant odor and reliable in action.

I feel that the experience derived from my own cases, together with the commendation of other experimenters,

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justify me in urging upon the profession a more extended trial of this agent in alleviating the sufferings of the most trying period of maternal life.

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